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EXRAND-M-25  
29 September 1969

Copy 36 of 45

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COMIREX SUBCOMMITTEE  
For  
EXPLOITATION RESEARCH AND DEVELOPMENT

Minutes of Meeting Held in IAS Conference Room  
0900-1200, Wednesday, 10 September 1969

Presiding

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1. Approval of Minutes

UNCLASSIFIED

The minutes were approved.

GROUP 1: EXCLUDED FROM  
AUTOMATIC DOWNGRADING  
AND DECLASSIFICATION

Declass Review by  
NIMA/DOD

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2. Announcements

a. An item of interest was announced: [redacted]

[redacted] has been appointed to replace [redacted]

b. There has been a new color "breakthrough" at [redacted] a copy of a [redacted] message is attached outlining the development of the new film.

c. [redacted] announced that [redacted] is abandoning their current development on dry film process.

d. [redacted] proposed a change of Chairmanship of the Technical Task Team brought about by several personnel changes in NPIC. The Chairman recommended that [redacted] be the new Chairman of the Team relieving [redacted]. The members of EXRAND unanimously agreed to the change. [redacted] then made his last report to EXRAND and commented on his written memorandum report on the current status of R&D programs in the Community. (Memo to Chairman, EXRAND of 10 September 1969; "Technical Task Team Progress Report;" attached.) -- [redacted] reported that the Technical Task Team held a meeting on Tuesday, 26 August which lasted about 6 hours discussing approximately 330 R&D Community Projects of mutual interest. He found there was very little duplication in the R&D program primarily because NPIC projects were oriented to the National Strategic Requirements while all others were primarily directed to tactical requirements. The Team worked on a selective listing of projects for National interests. The Team discovered that although EXRAND objectives were valid, they were only incidentally used because the Department of Defense uses their own joint objectives document. NPIC on the other hand uses the EXRAND objectives for planning but not necessarily for programming.

[redacted] remarked that the EXRAND objectives were designed to be used as evaluation tools and not as directives to the Community, therefore the objectives as written were of great value. [redacted] added that the objectives should be used as a measuring stick to identify R&D gaps and to identify unwarranted duplication. The EXRAND representatives accepted the report and noted that the minutes of the meeting as recorded herein and the attached memorandum would serve as an informal interim progress report to the Chairman of COMIREX.

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3. Special Briefings

25X1 a. [ ] introduced the subject of Near Real Time (read-out technology) and the speaker, [ ] project officer for Applied Research and Advanced Technology, [ ] He spoke generally on the most recent development of Near-Real Time systems. The requirements, as stated by [ ] have been USIB approved. Details of the briefing are not recorded in these minutes.

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25X1 b. [ ] Deputy Chief, Research Engineering Division, TSSG, NPIC, briefed on the High Precision Stereo Comparator System, developed by NPIC and [ ] This is an Advanced Mensuration device designed for the 1970's. An outline of the briefing is attached.

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25X1 c. [ ] spoke on the latest development by [ ] which he had just visited the previous day. [ ] has achieved new advancements in the "Free Radical" process. Details are attached.

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25X14. Old Business

25X1 a. [ ] reported on characteristics of the [ ] Dry Silver Process and coating problems and attendant film base hurdles to overcome.

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25X1 b. [ ] also reported on a recent development of [ ] a new motor film drive system which will be a new NPIC contract (90 days, [ ] production costs for the drive system (four motors) will be about [ ] It will provide a dramatic improvement over the [ ] drive system currently on the 1540 Light Table.

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25X1 c. [ ] brought up the procurement contract problems in adding a new competitive item to the procurement list. [ ] stated that the Procurement Coordinating Team will meet today at 1300. (A copy of the new Terms of Reference is attached.)

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d. The item of business concerning observer status for [ ] ACDA was postponed until the next meeting.

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e. [ ] asked for the current status of the Selected Target Printing problem induced by the on-coming system as it affects EXRAND. The Chairman stated that we do not yet have the basis for exploitation requirements until EXSUBCOM completes their requirement work on distribution. [ ] stated he believed that EXRAND should provide a response to the basic [ ] memo to EXRAND (11 June 1969). A copy of this memo will be sent to members under separate cover. The item will be discussed at our next meeting.

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[ ]  
Executive Secretary, EXRAND

Attachments:  
As Stated

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Attachment I  
EXRAND  
12 September 1969

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MESSAGE FROM [ ] 4 SEPTEMBER 1969

1. INFORMAL WORD HAS BEEN RECEIVED FROM [ ] THAT THEY ANTICIPATE QUANTITIES OF THEIR IMPROVED SO-121 COLOR FILM WILL SOON BE AVAILABLE FROM PRODUCTION.
2. EXPERIMENTAL COATING AND FLIGHT TESTS INDICATE THE FOLLOWING PRELIMINARY DATA:
  - A. SPEED IDENTICAL TO 3404.
  - B. TESTS HAVE BEEN ON A 4 MIL BASE, BUT FIRST PRODUCTION QUANTITIES WILL PROBABLY BE ON A 2.5 MIL STB BASE. THERE IS NO KNOWN REASON THAT UTB CANNOT EVENTUALLY BE USED.
  - C. THE NEW COLOR EXPERIMENTS TO DATE SHOW AN INCREASED EDGE SHARPNESS, IMPROVED DYE HOMOGENEITY, AND ENHANCED COLOR DISCRIMINATION; AND THESE GO TOGETHER TO FORM SUPERIOR IMAGERY OVER SO-121.
  - D. WHERE SO-121 WILL NORMALLY BREAKUP AT ENLARGEMENTS ABOVE 25X, THE NEW COLOR IS REGULARLY BEING ENLARGED FROM 50X TO 80X.
  - E. UNDER CONDITIONS WHERE SO-121 PROVIDES 85L/MM, THE NEW MATERIAL SHOWS 114 L/MM.
3. [ ] IS ALSO WORKING TO IMPROVE REPRODUCTION TECHNIQUES AND MATERIALS AND HOPES TO MAKE A SIMILAR IMPROVEMENT IN SO-180.
4. A FULL BRIEFING BY [ ] WITH SAMPLES, SHOULD BE READY IN A FEW WEEKS. MEANWHILE, THIS DATA SHOULD BE CONSIDERED PRELIMINARY AND INFORMAL. EXPERIMENTAL COATINGS MUST BE VERIFIED IN PRODUCTION.
5. ANTICIPATE RED DOT TESTING AS SOON AS PRACTICAL.

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END OF MESSAGE

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Attachment II  
10 September 1969

MEMORANDUM FOR: Chairman, EXRAND

SUBJECT: Technical Task Team Progress Report

1. The EXRAND Technical Task Team met for a full day on 26 August 1969. Members reviewed 138 individual R&D projects contained in a working copy of the Second Annual Consolidated R&D Project List. These projects were selected by TTT members from their FY 70 and FY 71 programs because they were judged to have national impact and interest. Each project was reviewed, related to one or more EXRAND objectives and placed in a program category for ease in identifying similarities. Projects were discussed in sufficient depth to satisfy Team members on the character of the work, the degree of coordination previously accomplished and the relationships between similar projects.

2. Two major tasks were undertaken:

a. The first task was to determine the degree to which the EXRAND Objectives were being satisfied. Time did not permit completion of this task; however, it was evident that some work was being done in each of the areas specified in the EXRAND Objectives. Whether or not this work is adequate is still to be determined. It is significant to note that little consideration is being given to EXRAND objectives in program planning. NPIC uses them as guides in long range planning but not necessarily in developing project lists. Dept. of Defense members rely only on identified needs of the tactical forces and the Joint Research and Development Objectives Document.

b. The second task was to surface evidence of unwarranted duplication of effort. Some reluctance to address this subject was expressed by members because only projects of national impact were reviewed and this was considered insufficient information. Nevertheless,

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members did agree to this statement, "no unwarranted duplication of effort is evident but dual or multiple interest in projects is widespread and is being adequately coordinated on the working level.

3. The EXRAND Objectives document was reviewed and found still valid. No effort to revise the document is recommended at this time.



Chairman  
EXRAND Technical Task Team

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Attachment III  
EXRAND  
10 September 1969

HIGH PRECISION STEREOCOMPARATOR

I. "To Provide NPIC With A High Performance Measuring Instrument Capable Of Handling Operational Stereoscopic Reconnaissance Photography."

A. The features desired in the instrument were:

1. Ability to measure and point to micron accuracy--1/2 micron reliability--1/4 micron least count--Ideal reticle with constant size.
2. High Performance Optical System Commensurate with the measuring accuracy.
3. Ease of Operation [ ] Instrument)
4. Variable Magnification (Independent)
5. Controls for superposition to micron accuracy.

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B. These requirements pushed the state-of-the-art. Therefore, it was decided to contract for a Feasibility Study to see how many of these goals were obtainable. This was carried out with competitive contracts between [ ] From July 1965 to January 1966. The Feasibility Study indicated:

1. The measuring accuracy desired was obtainable.
2. High performance optical system was possible.
3. Correlation would relieve the operator of the task of making tedious corrections.
4. Joystick and trackballs would improve controls.

C. [ ] work in the competitive studies was considered superior to the other company and [ ] was awarded a contract in January 1967 to design the High Precision Stereo Comparator. [ ] ( [ ] company) as the subcontractor for the optical system and [ ] for the correlation system. This design contract was completed in January 1968 and resulted in the complete design, computations, and drawings for the instrument. The main features were:

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1. Accuracy: 0.5 micron plus 10 parts per million of distance traveled. Least count 0.1 micron.

2. Optical System: 10X to 200X magnification with 10 to 1 independent zoom and two interchangeable objectives.

3. Optical Resolution: 40mm lens--900 l/mm on axis at 200X and 110 l/mm at 20X with white light. 80mm lens--500 l/mm at 100X and 50 l/mm at 10X with white light. Monochromatic light will give about 1080 l/mm at 200X and 110 l/mm at 20X.

4. Autocorrelation and Stereo Tracking to relieve the operator of tedious correction tasks.

5. Operator's Control Console - Designed [ ] to make operator comfortable and improve his performance.

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D. Based on the results of the Design Contract, a fabrication contract was awarded [ ] in April 1968. The instrument is to be built as designed in the previous contract and to meet the specifications established in the design contract. This is a FPI contract with a ceiling of [ ] Present estimates are running about [ ]

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Fabrication Schedule:

1. 69% of the work is completed (August 1969).

2. [ ] will have the correlation system ready for acceptance by 1 October.

3. [ ] expects to have the optical system complete by 15 December.

4. Information will have computer programming completed by 15 November.

5. [ ] expects to have the instrument completely assembled and ready for customer preacceptance tests at [ ] by 15 March.

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6. [ ] hopes to start installing the instrument in Building 213 on 1 May 1970.

7. [ ] hopes to have the instrument installed, checked out, and accepted by the customer by 30 July 1970.

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Attachment IV  
EXRAND  
12 September 1969

Free Radical Report

25X1 1. The free radical photo development at [ ] shows great promise in providing a very high resolution, positive-to-positive, dry photo system. 25X1

25X1 2. [ ] has invested a considerable amount of company funds into new facilities and coating plants. A new pilot plant should be operating by February 1970 and a production plant capable of about 155,000,000 sq. ft. of free radical emulsions is scheduled for completion by the end of 1970. For the first time there is an excellent probability that the laboratory demonstrations of materials and techniques will reach production.

25X1 3. They are working on a family of emulsions for purposes varying between dry microfilm reproduction and camera taking materials. One camera has been proposed by [ ], using their product, which would result in 1725 l/mm when a large aperture 1/8" lens is used. An entirely new dimension might be added to reconnaissance and intelligence through free radical films, but there is much work left to be accomplished in moving laboratory demonstrations to practical production and distribution.

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### TERMS OF REFERENCE

#### EXRAND Procurement Coordinating Team

#### MISSION:

Pursuant to the objectives of the EXRAND Subcommittee which provides the mechanism for free exchange of information on exploitation and processing equipment in order to promote savings, standardization and dissemination of technical information, the Procurement Coordinating Team of the EXRAND will:

1. Advise and assist the EXRAND in creating an effective interface of procurement data to facilitate economy of operation and to satisfy mission objectives for the intelligence community.
2. Provide a focal point wherein procurement data may be disseminated from using organizations to the EXRAND.
3. Develop procedures whereby procurement actions may be coordinated to mutually assist all users in securing standardized equipment in large buys to result in procurement savings for the United States Government.

#### FUNCTIONS:

1. Compile and provide to EXRAND, lists of those items planned for purchase by agency/DOD components which offer potential dollar savings through joint-procurement.
2. Provide to the various agencies/DOD departments, through their EXRAND membership, planning information in regard to new exploitation and processing equipment in the R&D phase for future procurement planning.
3. Compile unsatisfactory report (UR) data from the users regarding equipment performance for distribution to the EXRAND members.

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4. Compile and disseminate test and evaluation (T&E) data to EXRAND regarding new equipment so that users may insure that it will satisfy their needs prior to procurement action.

5. Provide recommendations to EXRAND concerning suitable replacements for equipment found to be obsolete or obsolescent.

6. When appropriate, recommend sole-source procurement on specific items of equipment to the EXRAND membership.

7. Remain cognizant of the workings of the EXRAND Technical Task Team and apply this information as necessary.

8. On a continuing basis, members of the Team will provide information on excess processing/exploitation equipment made available from the community which could be utilized by other organizations.

#### MEMBERSHIP:

1. The Procurement Coordinating Team will consist of the members/alternates of the EXRAND or their designated representatives.

2. The Chairman will be the member/alternate representing the United States Air Force.

#### PROCEDURES:

The Procurement Coordinating Team shall meet at the direction of the Chairman to fulfill the mission and functions stated above, but no less than quarterly.

#### AUTHORITY:

The Procurement Coordinating Team is a coordinating unit responsive to EXRAND. It shall receive direction from the EXRAND and normally provide its functions through its members.

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Attachment VI  
10 September 1969

EXRAND PROCUREMENT COORDINATING  
TEAM MEETING

Wednesday, 10 September 1969

Presiding



1. The meeting began with a brief discussion of the Terms of Reference for the Team.

2. [redacted] asked each member to compile a tentative list of what is being bought by each of their organizations for the next meeting.

3. [redacted] informed the members that the Air Force buys technical data and spare parts with every purchase that they make.

4. The next meeting will be held following the October EXRAND meeting in the same room and at 1300.

[redacted]

Chairman

EXRAND Procurement Coordinating Team

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